

Translation

PATENT COOPERATION TREATY  
PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

PCT Application  
PCT/JP2002/005432



Applicant's or agent's file reference  102-1003	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No.  PCT/JP02/05432	International filing date (day/month/year)  03 June 2002 (03.06.02)	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC  B01J 35/02, 31/12		
Applicant  ASAHI KASEI KABUSHIKI KAISHA		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

I  Basis of the report  
II  Priority  
III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  
IV  Lack of unity of invention  
V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  
VI  Certain documents cited  
VII  Certain defects in the international application  
VIII  Certain observations on the international application

Date of submission of the demand  28 November 2002 (28.11.02)	Date of completion of this report  06 August 2003 (06.08.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP02/05432

**L Basis of the report****1. With regard to the elements of the international application:\*** the international application as originally filed the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

 the claims:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement under Article 19)

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

 the drawings:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

 the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is: the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:** contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.**4.  The amendments have resulted in the cancellation of:** the description, pages \_\_\_\_\_ the claims, Nos. \_\_\_\_\_ the drawings, sheets/fig \_\_\_\_\_**5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	4-9, 16-21, 24, 25	YES
	Claims	1-3, 10-15, 22, 23	NO
Inventive step (IS)	Claims	4-6, 8, 18-21, 24, 25	YES
	Claims	1-3, 7, 9-17, 22, 23	NO
Industrial applicability (IA)	Claims	1-25	YES
	Claims		NO

**2. Citations and explanations**

Document 1: JP, 9-314052, A (Toto Ltd.), 9 December, 1997 (09.12.97)

Document 2: EP, 1136125, A1 (Asahi Kasei Corp.), 26 September, 2001 (26.09.01)

The subject matters of claims 1-3, 10-15, 22 and 23 do not appear to be novel in view of document 1 cited in the ISR.

The photocatalyst composition comprising

(A) modified photocatalyst particles obtained by modification treatment of titanium oxide particles using a Si-H group-containing silicon compound, and

(B) a binder, as another ingredient, containing a phenyl group-containing silicone described in claims 1-3 and 10-12 is disclosed in document 1 (claims 4 and 6, [0014], [0015], [0022] and [0023]) (it is described in [0015] that using a phenyl group-containing silicone is preferred).

Furthermore, document 1 (claim 4, [0009]) discloses the constitutions described in claims 13-15, 22 and 23, in which (1) a photocatalyst composition contains a resin, and (2) the distribution of modified photocatalyst particles is anisotropic in a film or functional composite respectively containing a photocatalyst composition.

The subject matters of claims 7, 9, 16 and 17 do not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR.

Document 1 does not disclose the constitutions described in claims 7 and 9, in which (1) the average molecular weight of a phenyl group-containing silicone is from 500 to 10000, and (2) the average particle size of modified photocatalyst particles is 400 nm or less. However, as described in document 2 (claim 1, [0137]), the said average molecular weight and average particle size merely show the ranges of values usually discussed hitherto, and a person skilled in the art could have easily conceived of optimizing preferred numerical ranges or finding preferred suitable numerical ranges, to limit the numerical ranges as described in claims 7 and 9.

Moreover, document 1 does not disclose the constitution described in claims 16 and 17 in which a photocatalyst composition is molded into an article, but as described in document 2 (claim 29), molding a photocatalyst composition into an article is a merely well-known technique. So, a person skilled in the art could have easily conceived of employing the well-known technique in the invention described in document 1, to arrive at the subject matters of claims 16 and 17.

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of : V.2

The subject matters of claims 4-6, 8, 18-21, 24 and 25 appear to be novel and to involve an inventive step in view of the documents cited in the ISR. Document 1 does not describe that a binder, as an ingredient, contains an alkyl group-containing silicone in addition to a phenyl group-containing silicone, and a person skilled in the art could not have easily conceived of this constitution either.